

Enclosure of March 22, 2005

PCT-Application No.: PCT/IB03/06227  
Applicant: TOYOTA JIDOSHA KABUSHIKI KAISHA  
Our ref: WO 40173

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**New claims 1 to 24**

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10 1. A cylinder head in which a water jacket is formed around a cylinder top portion, and which, combined with a separate cylinder block (210), forms an engine main body, the cylinder head characterized by comprising:

15 a main body cylinder head (208) which has a mounting surface and which defines a cylinder top portion side of the water jacket, and

20 an outer cylinder head (206) which is molded separately from the main body cylinder head (208) as a cylinder head portion which defines a side of the water jacket opposite the cylinder side, the outer cylinder head being arranged in a predetermined position so as to be on the mounting surface (224) of the main body cylinder head (208) so as to define, together with the main body cylinder head (208), the water jacket, the outer cylinder head (206) to be fixed in place while pressed between the cylinder block (210) and the main body cylinder head (208) while arranged in the predetermined position.

25 2. The cylinder head according to claim 1, characterized in that a positioning portion for determining a mounting position of the outer cylinder head (206) with respect to the main body cylinder head (208) is formed on at least one of the main body cylinder head (208) and the outer cylinder head (206).

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3. The cylinder head according to claim 1 or claim 2, characterized in that the outer cylinder head (206) is formed of a resin or a resin composite.

5 4. The cylinder head according to claim 1 or claim 2, characterized in that the outer cylinder head (206) is formed of one or two or more materials selected from the group consisting of an aluminum alloy, a magnesium alloy, a resin, a resin composite, and a ceramic.

10 5. The cylinder head according to any one of claims 1 to 4, characterized in that the main body cylinder head (208) is molded by casting using an aluminum alloy or a magnesium alloy.

15 6. An engine main body which includes a cylinder block (110) in which a water jacket (150a, 150b) is formed around a cylinder (112), and a cylinder head in which the water jacket (150a, 150b) is formed around a cylinder top  
20 portion, the engine main body characterized by comprising:

a main body cylinder block (104) which has a mounting surface and which defines a cylinder side of the water jacket (150a, 150b);

25 a main body cylinder head (108) which has a mounting surface and which forms a cylinder top portion side of the water jacket (150a, 150b); and

30 an outer cylinder block (106) which is molded separately from the main body cylinder block (104) and the main body cylinder head (108) as a cylinder block portion which defines a side of the water jacket (150a, 150b) opposite the cylinder (112) side and the cylinder top portion side, the outer cylinder block (106) being arranged in a predetermined position so as to be between the  
35 mounting surface of the main body cylinder block (104) and  
the mounting surface of the main body cylinder head (108)

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so as to define, together with the main body cylinder block (104) and the main body cylinder head (108), the water jacket (150a, 150b), the outer cylinder block (106) being fixed in place while pressed between the main body cylinder block (104) and the main body cylinder head (108) while arranged in the predetermined position.

7. The engine main body according to claim 6, characterized in that a positioning portion for determining a mounting position of the outer cylinder block (106) with respect to the main body cylinder block (104) is formed on at least one of the main body cylinder block (104) and the outer cylinder block (106).

8. The engine main body according to claim 6 or claim 7, characterized in that the outer cylinder block (106) is formed of a resin or a resin composite.

9. The engine main body according to claim 6 or claim 7, characterized in that the outer cylinder block (106) is formed of one or two or more materials selected from the group consisting of an aluminum alloy, a magnesium alloy, a resin, a resin composite, and a ceramic.

10. The engine main body according to any one of claims 6 to 9, characterized in that the main body cylinder block (104) is molded by casting using an aluminum alloy or a magnesium alloy.

11. The engine main body according to claim 10, characterized in that the main body cylinder block (104) has a cylinder liner cast into a bore portion of the main body cylinder block (104).

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12. The engine main body according to claim 10, characterized in that a bore portion of the main body cylinder block (104) is surface treated so as to be wear-resistant.

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13. The engine main body according to any one of claims 6 to 12, characterized in that the main body cylinder head (108) is molded by casting using an aluminum alloy or a magnesium alloy.

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14. The engine main body according to any one of claims 6 to 19, characterized in that the outer cylinder block (106) is fixed between the main body cylinder block (104) and the main body cylinder head (108) with a fastening bolt (152).

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15. The engine main body according to any one of claims 6 to 14, characterized in that sealing material (435) or welding is used to seal between the main body cylinder block (404) and the outer cylinder block (406).

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16. An engine main body characterized by comprising the cylinder head according to any one of claims 1 to 5 and a cylinder block, the outer cylinder head (206) being fixed between the cylinder block and the main body cylinder head (208) with a fastening bolt.

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17. The engine main body according to claim 16, characterized in that sealing material or welding is used to seal between the main body cylinder head (208) and the outer cylinder head (206).

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18. An engine main body comprising a cylinder head according to any of the claims 1 to 5, a cylinder block

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(210) in which a water jacket (50; 450) is formed around a cylinder (12; 412),

wherein the cylinder block has

a main body cylinder block (4; 404) which has a mounting  
5 surface (24; 424) and which defines a cylinder (12; 412)  
side of the water jacket (50; 450), and

an outer cylinder block (6; 406) which is molded  
separately from the main body cylinder block (4; 404) as a  
cylinder block portion which defines a side of the water  
10 jacket (50; 450) opposite the cylinder (4; 412) side, the  
outer cylinder block (6; 406) being arranged in a  
predetermined position so as to be on the mounting surface  
(24; 424) of the main body cylinder block (4; 404) so as to  
define, together with the main body cylinder block (4;  
15 404), the water jacket (50; 450), the outer cylinder block  
(6; 406) to be fixed in place while pressed between the  
cylinder head (8) and the main body cylinder block (4; 404)  
while arranged in the predetermined position.

20 19. The engine main body according to claim 18,  
characterized in that a positioning portion (28) for  
determining a mounting position of the outer cylinder block  
(6; 406) with respect to the main body cylinder block (4;  
404) is formed on at least one of the main body cylinder  
25 block (4; 404) and the outer cylinder block (6; 406).

20. The engine main body according to claim 18 or  
claim 19, characterized in that the outer cylinder block  
(6; 406) is formed of a resin or a resin composite.

30 21. The engine main body according to claim 19 or  
claim 20, characterized in that the outer cylinder block  
(6; 406) is formed of one or two or more materials selected  
from the group consisting of an aluminum alloy, a magnesium  
35 alloy, a resin, a resin composite, and a ceramic.

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22. The engine main body according to any one of claims 18 to 21, characterized in that the main body cylinder block (4; 404) is molded by casting using an aluminum alloy or a magnesium alloy.

23. The engine main body according to claim 22, characterized in that the main body cylinder block (4; 404) has a cylinder liner (22; 422) cast into a bore portion of the main body cylinder block (4; 404).

24. The engine main body according to claim 22, characterized in that a bore portion of the main body cylinder block (4; 404) is surface treated so as to be wear-resistant.

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